

Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1. (Original) An articulated boom comprising:

a support arm defining a number of hingedly-connected joints, the arm being adapted and arranged to carry an antenna reflector so that in use, the reflector can move between a first stowed position in which the reflector is in folded condition and a second deployed position in which the reflector is in deployed condition.

Claim 2. (Currently Amended) An articulated boom for connection to a spacecraft vehicle comprising:

a support arm defining a number of hingedly-connected joints, the arm being adapted and arranged to carry an antenna reflector so that in use, the reflector can move between a first stowed position in which the reflector is nested within a predetermined volume of [[the]] ~~a~~ spacecraft vehicle and a second deployed position in which the reflector is deployed in space.

Claim 3. (Currently Amended) An articulated boom as claimed in ~~claim 1 or~~ claim 2 wherein the support arm includes a dog-leg for permitting

stowage of the reflector in said first stowed position, the dog-leg being adapted and arranged to permit the support arm of the boom to be positioned at the circumference of the reflector when in the stowed condition position.

Claim 4. (Currently Amended) An articulated boom as claimed in claim 1 ~~or claim 2 or claim 3~~ wherein there are four single-axis hingedly-connected joints.

Claim 5. (Currently Amended) An articulated boom as claimed in ~~any~~ preceding claim 4 wherein one or more of said hingedly-connected joints comprises an articulated stepper motor harmonic drive unit.

Claim 6. (Currently Amended) An articulated boom as claimed in ~~any~~ preceding claim 5 wherein at least one ~~or more~~ of said hingedly-connected joints comprises a spring-operated mechanical hinge.

Claim 7. (Currently Amended) An articulated boom as claim in ~~any~~ preceding claim 6 further comprising antenna pointing means.

Claim 8. (Original) An articulated boom as claimed in claim 7 wherein the antenna pointing means relies upon application of a 2-axis antenna pointing mechanism.

Claim 9. (Currently Amended) An articulated boom as claimed in claim 8 wherein [[the]] 2-axis antenna pointing mechanism functions are separately mounted on the support arm and the reflector.

Claim 10. (Currently Amended) An articulated boom as claimed in ~~any~~ preceding claim 9 wherein the support arm is configured to be sufficiently long so as to carry an antenna reflector of ~~around~~ approximately 3.5 ~~metres~~ meters diameter with an associated focal length of ~~around~~ 7 ~~metres~~ meters.

Claim 11. (Currently Amended) An articulated boom as claimed in ~~any~~ preceding claim 10 wherein the hingedly-connected joints are bolted using metal bracket means with a degree of flexibility to accommodate [[for]] changes in the material properties of the boom in response to temperature variations between +140°C and -180°C.

Claim 12. (Currently Amended) An articulated boom as claimed in ~~any~~ ~~of claims 2 to 11~~ claim 11 wherein one end of the support arm is mounted to [[the]] associated feed structure of the spacecraft ~~vehicle~~ and [[the]] an opposing end of the support arm is mounted to the antenna reflector.

Claim 13. (Original) An articulated boom as claimed in claim 12 wherein the reflector when in stowed position is foldably mounted to a sidewall of the spacecraft vehicle on a plurality of hold-down points, which hold-down points are operably released prior to deployment of the reflector.

Claim 14. (Currently Amended) An articulated boom as claimed in claim 13 wherein said hold-down points are formed such as to provide a degree of compliance in a ~~number~~ plurality of predetermined directions, permitting the boom and the spacecraft structure [[not]] to avoid imparting ~~impair~~ unwanted thermal expansion loads on each other.

Claim 15. (Currently Amended) A ~~satellite or spacecraft~~ space vehicle incorporating into at least one side thereof ~~one/each of its sides~~ two or ~~more~~ booms ~~of the type~~ as claimed in ~~any of claims 1 to~~ claim 14, enabling at least two ~~or more~~ reflectors to be deployed from said at least one ~~one/each~~ side of the ~~satellite/spacecraft~~ space vehicle.

Claim 16. (Currently Amended) A ~~satellite or spacecraft~~ space vehicle as claimed in claim 15 wherein [[the]] support arms of the at least two ~~or more~~ booms are positioned at [[the]] a circumference of [[the]] associated reflectors when in the stowed condition position, such as to allow the reflectors to be stacked together within a space defined by [[the]] an associated launch vehicle fairing.

Claim 17. (Currently Amended) A ~~satellite or spacecraft~~ space vehicle incorporating into at least one side thereof ~~one/each of its sides~~ a hingedly-mounted support structure including an antenna reflector with boom of the type claimed in ~~any of claims 1 to~~ claim 14.

Claim 18. (Currently Amended) A ~~satellite or spacecraft~~ space vehicle as claimed in claim 17 wherein the associated feed structure is mounted to a separately-formed floor of the ~~satellite/spacecraft~~ space vehicle.

Claim 19. (Currently Amended) A ~~satellite or spacecraft~~ space vehicle incorporating into at least one ~~one/each~~ of its sides

- (a) a first hingedly-mounted support structure including an antenna reflector with ~~a boom of the type as~~ claimed in ~~any of claims 1 to~~ claim 14; and
- (b) a second different hingedly-mounted support structure for carrying a plurality of antenna reflectors.

Claim 20. (Currently Amended) A reflector system for space-based applications incorporating an antenna reflector with ~~a~~ supporting boom as claimed in ~~any of claims 1 to~~ claim 14.

Claim 21. (Original) An antenna structure incorporating a reflector system as claimed in claim 20.

Claims 22.-23. (Cancelled)

Claim 24. (Currently Amended) A method of stacking a plurality of deployable antenna reflectors in spacecraft, said method comprising:

providing a first antenna reflector with a first articulated boom having of the type claimed in any of claims 1 to 14; a support arm defining a number of hingedly-connected joints, the arm being adapted and arranged to carry an antenna reflector so that in use, the reflector can move between a first stowed position in which the reflector is in folded condition and a second deployed position in which the reflector is in deployed condition;

moving said first antenna reflector to a first nesting position close to a sidewall of the spacecraft in such a manner that its supporting boom follows [[the]] a circumference of the first antenna reflector along a first path;

providing a second antenna reflector with a second articulated boom of the type claimed in any of claims 1 to 14; and which is substantially identical to the first articulated boom; and

moving said second antenna reflector to a second nesting position close to the sidewall of the spacecraft in such a manner that its supporting boom follows [[the]] a circumference of the second antenna reflector along a second path [[and]] such that the first and second reflectors are ~~disposed in juxtaposition~~ juxtaposed in a stacked relationship.

Claim 25. (Cancelled)